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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/533,231	04/29/2005	Yasuhito Yuasa	10873.1685USWO	5067

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EXAMINER	
BURNEY, RACHEL L	
ART UNIT	**PAPER NUMBER**
1753	
MAIL DATE	**DELIVERY MODE**
10/04/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/533,231	YUASA ET AL.	
	Examiner	Art Unit	
	Rachel L. Burney	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04/29/2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) *19-21* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-21* are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04/29/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/29/2005 and 07/31/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 1-18, drawn to a developer.

Group II, claim(s) 19, drawn to an image formation method.

Group III, claim(s) 20 and 21, drawn to an image formation method.

2. The inventions listed as Groups I, II, and III do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Groups I and III do not require the AC bias frequency and DC bias of group II, group I does not require the transfer system comprising a plurality of image forming stations of group II.

3. During a telephone conversation with Douglas Mueller on 09/18/2007 a provisional election was made without traverse to prosecute the invention of Group 1, claims 1-18. Affirmation of this election must be made by applicant in

replying to this Office action. Claims 19-21 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

4. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Information Disclosure Statement

5. The information disclosure statements (IDS) submitted on 04/29/2005 and 07/31/2006 were filed on or after the mailing date of the national-stage application on 04/29/2005. The submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

6. In the IDS filed on 04/29/2005 there is listed US document 2003/27072, it is assumed this is US PGPub 2003/0027072 and Japanese patent 10-198070 does not have an English translation, and the relevance is not listed anywhere, therefore it has not been considered.

7. US PGPub 2002/0086229 is listed in both the IDS filed on 04/29/2005 and the IDS filed 07/31/2006, therefore it has been crossed off; Japanese patents 2619439, 2744790, 9-281748, 2801507, 2000-214638, and 2002-23429 do not have an English translations, and the relevance is not listed anywhere, therefore they have not been considered.

8. Canadian patents 1166626 and 1094168, European patent application 0606074, and Japanese patent 1147478 and 1284862 have been filed with the instant application, but are not on any filed IDS, therefore they have not been considered.

9. Japanese patent 99111474 and application 200380102687 have been filed with the instant application, but are not on any filed IDS and do not have an English translation, therefore they have not been considered.

10. Two documents, one which appears to be a US PGPub and one which appears to be a US patent, have been filed with the instant application, but do not contain any document identifiers, and therefore have not been considered.

Specification

11. The disclosure is objected to because of the following informalities: paragraph 0048 refers to "18B" this should read "18K".

Appropriate correction is required.

12. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor

and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claims 1, 6, 11, 12, and 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6579653, Yuasa et al. in view of US PGPub 2002/0064724, Nakamura et al.

With respect to claim 1, Yuasa discloses a two-component developer comprising a carrier that comprises a core coated with a resin (column 40, lines 1-3) the resin is a curing type silicone resin (column 40, lines 61-62) which contains an aminosilane coupling agent (column 26, lines 26-30), and a toner which contains a binder resin, a colorant, a fixing adjuvant, and an additive (column 11, lines 26-29) where the fixing adjuvant is a wax that is a C_{16}-C_{24} aliphatic amide or a alkylene bis fatty acid amide (column 17, line 42 – column 18, line 31). Yuasa does not disclose the fluorine-modified silicone resin of the instant application. Nakamura discloses a toner having a binder, a coloring agent, and a charge controlling agent (PP 0098) (a wax) wherein the toner is in a two-component developer (PP 0017) containing a carrier with a core particle that is coated with a resin (PP 0018) wherein the resin is a cure-type fluorine-modified silicone resin (PP 0021). This resin improves the lifetime of the printing performance (PP 0061). It would have been obvious to one

of ordinary skill in the art at the time of the invention to use the cure-type fluorine-modified silicone resin of Nakamura as the curing silicone resin of Yuasa to improve the lifetime of the printing performance.

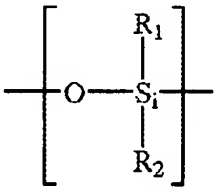
With respect to claim 6, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, wherein the metal oxide fine powder has an average particle size of 20-2000nm (column 39, lines 1-2) in an amount from 0.5 to 5 parts by weight (column 24, 12-21).

With respect to claim 11, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, but does not disclose the amount by weight of the aminosilane coupling agent in the weight of the coating resin, but it would have been obvious to one of ordinary skill to find an amount that is workable in the developer, which could reasonably fall in the large range of 5 to 40%.

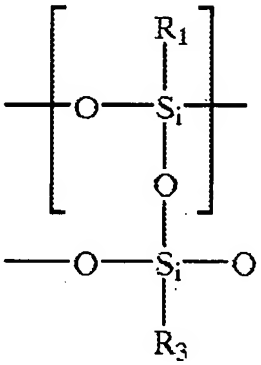
With respect to claim 12, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, wherein the toner is present in an amount of 1-10 wt% (Nakamura, PP 0100), leaving 90-99% for the carrier.

With respect to claims 14-16, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, wherein the fluorine-modified silicone resin is obtained by reacting a perfluoroalkyl group-containing organosilicon compound selected from $CF_3CH_2CH_2Si(OCH_3)_3$, $C_4F_9CH_2CH_2Si(CH_3)(OCH_3)_2$, $C_8F_{17}CH_2CH_2Si(OCH_3)_3$,

$C_8F_{17}CH_2CH_2Si(OC_2H_5)_3$, and $(CF_3)_2CF(CF_2)_8CH_2CH_2Si(OCH_3)_3$ (PP 0080); and a polyorganosiloxane having the formula:



or



wherein R_1, R_2 and R_3 independently represent hydrogen, halogen, hydroxy, methoxy, C_1-C_4 alkyl, organic group such as phenyl group or the like (PP 0078 and 0079).

With respect to claim 17, Yuasa modified by Nakamura discloses the developer of claim 14 as discussed above, but does not disclose the amount by weight of the polyorganosiloxane in the weight of the perfluoroalkyl group-containing organosilicon, but it would have been obvious to one of ordinary skill to find an amount that is workable in the developer, which could reasonably fall in the range of 3 to 20%.

With respect to claim 18, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, wherein the aminosilane

coupling agent is γ-(2-aminoethyl) aminopropylmethyldimethoxysilane (column 26, lines 26-43).

16. Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6575963, Yuasa et al. in view of US PGPub 2002/0064724, Nakamura et al. as applied to claim 1 above, and further in view of US PGPub 2003/0152856, Mizoe et al.

With respect to claim 2, Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, but fails to teach the synthetic wax of (A). Mizoe discloses a toner comprising a binder resin, colorant, and an additive (PP 0064) and a Fischer-Tropsche wax (PP 0192) wherein the wax has a DCS heat-absorption main peak of 60-140°C and an acid value of 50 mgKOH/g (PP 0194) which is a block copolymer of brassidic acid, a long-chain alkyl alcohol, and a hydrocarbon wax (PP 0192). The toner has an inorganic find powder (PP 0038) that has an average size of 4-80nm in an amount of 0.1-8% (PP 0140). The wax of Mizoe is a release agent (PP 0192). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the wax of Mizoe in the toner of Yuasa and Nakamura as a release agent.

With respect to claim 3, Yuasa modified by Nakamura further modified by Mizoe discloses the developer of claim 2 as discussed above, but fails to teach the molecular weight profile of the wax. Since the wax is a similar wax as that used in the instant application, it would be reasonable to

conclude that the molecular weight profile of the wax would be substantially similar to that of the instant application.

17. Claims 4, 5, 7, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6575963, Yuasa et al. in view of US PGPub 2002/0064724, Nakamura et al. as applied to claim 1 above, and further in view of US PGPub 2002/0086229, Yuasa et al.

With respect to claims 4 and 7, Yuasa '963 modified by Nakamura discloses the developer of claim 1 as discussed above, but fails to teach the wax of (B) or (D). Yuasa '229 discloses a two-component developer comprising a toner comprising a additive, a wax, and a binding resin (PP 0013) and a carrier having a core and a coating resin (PP 0056) wherein the wax is an ester wax having an iodine value of less than 25 and a saponification value of 30-300 (PP 0021) or the wax is a derivative of glycol fatty acid esters or sorbitan fatty acid esters (PP 0100). The ester based waxes serve as a fixing assistant for improving the fixability (PP 0095). The toner of Yuasa '229 has an inorganic fine powder (PP 0037) wherein the powder has an average particle diameter of 5 to 100 nm (PP 0041) and is present in an amount of .1-10 % (PP 0042). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the wax of Yuasa '229 in the toner of Yuasa '963 and Nakamura as a fixing assistant for improving the fixability.

With respect to claim 5, Yuasa '963 modified by Nakamura further modified by Yuasa '229 discloses the developer of claim 4 as discussed above, wherein the number average molecular weight Mn is100 to 5000, the weight average molecular weight Mw is 200 to 10000, and Mw/Mn of not more than 8, a heating loss at 220.degree (claim 1). Yuasa '229 does not give the full molecular weight profile as disclosed by the instant application, but gives enough of the profile to suggest that the measurements not given above would also be substantially similar.

With respect to claim 13, Yuasa '963 modified by Nakamura discloses the developer of claim 1 as discussed above, but fails to teach the amount of the additive. Yuasa '229 teaches that the additive should be present in an amount of 0.1-6% by weight (PP 0169).

18. Claims 8-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 6575963, Yuasa et al. in view of US PGPub 2002/0064724, Nakamura et al. as applied to claim 1 above, and further in view of US Patent 6117607, Shimizu et al. Yuasa modified by Nakamura discloses the developer of claim 1 as discussed above, but fails to teach multiple inorganic powders. Shimizu teaches multiple inorganic fine powders having a weight ratio of 50/50 to 10/90 of positively charged inorganic powders to negatively charged fine powders (column 3, lines 25-33) wherein the total makes about 1.3 wt% of the toner (table 2, column 14, lines 15-35) which would make the amounts of the individual inorganic powders substantially similar to those in the instant

application. The inorganic powders are broken into multiple groups depending on size, the first group has an average size of 30-120nm and the second group is less than 20nm (column 3, lines 34-39). Shimizu does not discuss the ignition loss of the inorganic fine powders, but since it is a similar product in a similar embodiment, it is reasonable to conclude that the ignition losses would be substantially similar to that of the instant application. The multiple inorganic fine particles make it possible to substantially eliminate problems inherent in nonmagnetic development (column 2, lines 55-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the multiple inorganic powders of Shimizu in the toner of Yuasa and Nakamura it eliminate problems inherent in nonmagnetic development.

Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rachel L. Burney whose telephone number is 571-272-9802. The examiner can normally be reached on Mon-Thurs: 7:30-6:00 PM, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

RLB

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